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| 10/081,603 | 02/21/2002 | Stein Inge Pedersen | 57.0422 | 9598 |

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| EXAMINER | |
|---|---|
| PATEL, SHEFALI D | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2621 | |

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/081,603 | PEDERSEN, STEIN INGE | |
| | Examiner | Art Unit | |
| | Shefali D Patel | 2621 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *1-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/8/02;9/16/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. The following quotations of 37 CFR § 1.75(a) is the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

2. Claim 10 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

3. Claim 10 recites the limitation "said determined apparent orientation" in line 3 of claim 10. There is insufficient antecedent basis for this limitation in the claim.

It will be assumed that claim 10 depends on claim 9 instead of claim 1.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites, "repeated at least hundreds of times." What infringes this claim? Does 100 times infringe? How about 200, 300, 500, etc.? The specification does not help ascertain the meets and bounds of "at least hundreds." Please clarify and/or amend the claim appropriately.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for

patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 4, 6-7, 11-12, 14, 24, 26, and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishisaka (US 6,289,126).

Note: a cell is construed as a pixel.

With regard to **claim 1** Ishisaka discloses a method of extracting desired features from a cellular image (determining a boundary of an object in an image at col. 4 lines 62-67, col. 5 lines 33-38, col. 8 lines 57-63) comprising the steps of: (a) Selecting an initial cell within said image (selecting an initial pixel at col. 9 line 63 to col. 10 line 14); (b) Selecting an additional cell, near said initial cell, appearing to be associated with a desired feature (selecting pixels in a "chain direction" at col. 10 lines 15-37); (c) Repeating step (b) for further cells, near at least one of said previously selected cells, appearing to be associated with said feature, until selection termination criteria are satisfied (col. 13 lines 54-60), and (d) Repeating steps (a) through (c) for other initial cells (col. 16 lines 1-17).

With regard to **claim 2** Ishisaka discloses image as 2D image and cells as pixels (col. 9 lines 55-62).

With regard to **claim 4** Ishisaka discloses image being noisy in the background at col. 1 lines 60-64 and that the features (i.e., boundaries) are weakly defined because Ishisaka discloses that sometime in the processes of chain code direction, the linking pixel may not be found at col. 8 lines 22-26.

With regard to **claim 6** Ishisaka discloses data used to create said cellular image has been pre-processed to enhance the desired features in the cellular image (the image is enhanced so that features such as blood, cell, etc. can be visible in the image at col. 6 lines 13-53).

With regard to **claim 7** Ishisaka discloses initial cells are selected in step (a) by subdividing said cellular image into blocks (divided into 8x8, col. 6 lines 37-45) and selecting cells within said blocks

having maximum values of an objective function (selecting blocks with pixel value 1 being the max value (as oppose to value '0' in the background) at col. 6 lines 54-57, col. 8 lines 35-47).

With regard to **claim 11** Ishisaka discloses the further cells are located within a tracing viewfield associated with at least one of said previously selected cells (the further cells are located within the 8x8 window as seen in Figures 10-13).

With regard to **claim 12** Ishisaka discloses the selection of cells in step (c) is positively influenced by the previous selection of said cells during previous iterations of step (c) (col. 13 lines 54-66).

With regard to **claim 14** Ishisaka discloses steps (a) through (c) are repeated al least hundreds of times (col. 16 lines 1-17).

With regard to **claim 24** Ishisaka discloses faults as particles in blood or a cell to be subjected to inspection at col. 6 lines 21-24.

With regard to **claim 26** Ishisaka discloses a CRT display device 5 at col. 6 lines 6-7.

**Claims 30-31** recites identical features as claim 1 except claim 30 is a computer system/computer program on a computer readable medium claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 30. Applicant's attention is further invited to Figure 1 of Ishisaka where a computer system is disclosed.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 3, 5, 8-10, 15-17, 23, 25, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishisaka (US 6,289,126) in view of Ross et al. (hereinafter, "Ross") (US 6,608,628).

With regard to **claim 3** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose the image being a 3D image. Ross discloses a 3D image at col. 4 lines 17-20. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to use a 3D image (as in Ross) instead of 2D (as in Ishisaka) to get the depth of the object in an image to determine the orientation as well as the 2D features. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claim 3.

With regard to **claim 5** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose plurality of features intersect and are extracted from image as different objects. Ross discloses plurality of features intersect and are extracted from image as different objects (col. 7 lines 52-63 and col. 9 lines 19-26). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to extract features without losing surface integrity or topography as suggested by Ross at col. 7 lines 59-63. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claim 5.

With regard to **claims 8-10** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose orientation of an object in an image. Ross discloses orientation of an object in an image at col. 11 lines 58-66. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to get the depth of the object in an image by determining the orientation as well

as the 2D features. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claims 8-10.

With regard to **claims 15-17** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose segments of an object that are later merged. Ross discloses segments of an object that are later merged at col. 9 lines 29-54. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to merge segments on the boundary so that the pieces appears as a 3D solid when manipulated as suggested by col. 9 lines 29-34. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claims 15.17.

With regard to **claim 23** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose seismic, MRI, and CT data. Ross discloses seismic, MRI, and CT data at col. 5 lines 47-56 and col. 4 lines 25-27. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to capture images of human or geographical surface in three-dimensional image. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claim 23.

With regard to **claim 25** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose geologic horizons. Ross discloses geologic horizons at col. 5 lines 46-56. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to gain new insight by bisecting or otherwise cut into other types of scientific reconstruction as suggested at col. 5

lines 50-53. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claim 25.

With regard to **claim 27** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose stereo display. Ross discloses stereo display at col. 15 lines 1-5. Note, that the stereo display is needed to display a 3D image being processed. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Ross with Ishisaka. The motivation for doing so is to display the images of human or geographical surface in three-dimensional image. Therefore, it would have been obvious to combine Ross with Ishisaka to obtain the invention as specified in claim 27.

With regard to **claims 28-29** Ross discloses features displayed on a stereo net according to the orientations of the feature and allowing an interpreter to interactively edit using display at col. 11 line 58 to col. 12 line 5.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishisaka (US 6,289,126) in view of Schultz et al. (hereinafter, "Schultz") (US 2001/0002315 A1).

With regard to **claim 13** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose pheromone value. Schultz discloses this at paragraph 317 on page 25. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Schultz with Ishisaka. The motivation for doing so is to monitor physical motion as suggested by Schultz at paragraph 317. Therefore, it would have been obvious to combine Schultz with Ishisaka to obtain the invention as specified in claim 13.

11. Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishisaka (US 6,289,126) in view of DeYong et al. (hereinafter, "DeYong") (US 6,577,757).

With regard to **claims 18-22** Ishisaka discloses a method of extracting desired feature from an image as disclosed above in claim 1 and the arguments are not repeated herein, but are incorporated by reference. Ishisaka does not expressly disclose measure of confidence associated with features. DeYong discloses this in Table 10 at col. 29 and also at col. 30 lines 7-63. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of DeYong with Ishisaka. The motivation for doing so is determine whether the next point in the feature is on the object or outside and the highest measure of confidence tells one that that point should be part of the feature as suggested by DeYong at col. 6 lines 21-40 and col. 30 lines 63-67 as seen in Figure 25A. Therefore, it would have been obvious to combine DeYong with Ishisaka to obtain the invention as specified in claim 18.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D Patel whose telephone number is 703-306-4182. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shefali D Patel
Examiner
Art Unit 2621

March 2, 2005

BRIAN WERNER
PRIMARY EXAMINER